DELAY IN DESIGN PHASE IN MALAYSIA CONSTRUCTION:

THE CAUSE AND THE FACTOR TO REDUCE THE DELAY

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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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ABSTRAK

Kelewatan pembinaan adalah sesuatu yang menghalang keupayaan pihak berkuasa tertentu untuk mengekalkan jadual. Kelewatan nyata pada semua fasa projek, di mana mereka mungkin memulakan walaupun dalam fasa reka bentuk. Kelewatan dalam perancangan dan reka bentuk fasa untuk projek pembinaan secara literal adalah dalam keadaan kritikal. Walaupun kebanyakan kajian menumpukan perhatian kepada mencari sebab atau menyelesaikan masalah penangguhan dalam fasa pembinaan, beberapa kajian telah menganalisis masalah penangguhan dalam fasa perancangan dan reka bentuk. Oleh itu, kajian ini bertujuan untuk mengkaji secara mendalam mengenai fasa reka bentuk, sebab-sebab mereka, dan kemungkinan strategi untuk mengurangkan kelewatan dalam fasa perancangan dan reka bentuk. Sementara itu, soal selidik dalam talian juga diedarkan kepada perunding swasta untuk mendapatkan visi yang lebih jelas tentang masalah ini. Kaedah analisis indeks kepentingan relatif (RII) telah diterima pakai untuk menimbulkan sebab-sebab keterlambatan dari segi keparahan mereka seperti yang dirasakan oleh responden. Perubahan dalam keperluan pelanggan, takrifan skop yang lemah dan miskomunikasi adalah antara penyebab utama kelewatan dalam perancangan dan reka bentuk fasa. Aspek komunikasi boleh menjadi strategi utama utama untuk menyelesaikan beberapa sebab utama penangguhan, dalam usaha untuk mengurangkan kelewatan dalam fasa perancangan dan reka bentuk, serta dalam fasa pembinaan.

ABSTRACT

Construction delay is anything that impedes the ability of a certain obliged party to maintain a schedule. Delays manifest during all project phases, where they might initiate even in the design phase. Delays in the planning and design phases for construction projects were literally in a critical state. While most studies focus on finding causes or resolving delay problems in the construction phase, few studies had analyzed delay problems in the planning and design phases. Hence, this research aims to study in-depth about design phase, their causes, and the possible strategies to reduce delays in the planning and design phases. Meanwhile, an online questionnaire was also distributed to private consultants in order to get a clearer vision of this problem. Relative importance index (RII) analysis methods were adopted to rank delay causes in terms of their severity as perceived by the respondents. Changes in clients' requirements, poor scope definition and miscommunication were among the most critical causes of delay in the planning and design phases. The communication aspect could have been the principal key strategy to resolve some major delay causes, in the effort to mitigate delays in the planning and design phases, as well as in the construction phase.

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RII	Relative Importance Index

CHAPTER 1

INTRODUCTION

1.1 Introduction

Construction is a major industry that contribute for a nation's development. However, it is not easy to survive in this though industry. Construction companies must always be alert to ensure the quality of their work is at a good level. This is because they have to compete with dozens of other companies in the same field to get a good construction project. To achieve a satisfactory level of construction work, the company needs to do every job based on the established work phases. There are a few phases involved in a construction in order to ensure that the construction are carried out well. The phases involved in a construction project includes design, pre-construction, procurement, construction, commissioning, owner- occupancy and project closeout. Construction project management is traditionally separated into several independent and contiguous phases, e.g. planning, design, construction, commissioning, etc, and they are implemented respectively with almost no communication or interaction between participants in each phase (Gransberg and Ellicott 1997).

Design is a first stage of a construction project and it signals the beginning of the bidding process after it is completed. The owner chooses a contractor based on a completed designs for a design-bid-build contracts. In this stage, the feasibility of the design is first assessed by the architect or engineer based on the regulations and codes of the building, as well as the building's size, the number of rooms and the amount of space needed. After assessed all the information, the architect or engineer will creates schematic designs that includes the type of equipment used and materials needed plus their cost. Delay occurred in the first phase will obviously affect all the phases afterwards.

Architectural design is a complex and open process. Design process starts from the abstract stage to solve a design problem until it reaches the design solution in the form of design product. Designing activities is a repetitive problem solving process (Demirkan 1998). Watanabe (1994) describes designing process as a process to full-fill human needs through new idea produced. According to French (1998), architecture design is a response to human special needs which is refuge and comfort. Lawson (2007), states that architectural design is a process where an architect produced a space, place and building which has a big amount of effects on the quality of human life. Most architects agreed with Sanders (1996) whom stated that architectural design is a repetitive process where the process scheme can be recognized, valued, repeated, explored and repaired until the best solution is achieved. Decision making activities in architectural design process happens at sketching stage, schematic design stage and final design stage. At the details stage, design process is focused on producing drawings activity and planned building construction activity.

1.2 Background of Study

Delay in construction could be defined as the time overrun, happening at a later completion date than planned or expected, specified in the contract or beyond the date of the agreement between the parties for the delivery of the project. (A. Assaf & Al-Hejji, 2006). According to Assaf and Al-Hejji, seventy percent of construction projects experienced time overrun and the average time overrun was between 10% and 30% of the original duration.

Many researchers and practitioners have studied the cause of delay in construction projects. Most of the studies only conducted on the cause of delay occurred during construction phase. However, we need to realize the fact that a construction project have a long process that should be considered. This process starts with the design phase. Many overlooked this first phase. Any small changes that need to be done in this phase will affect the project timeline that will cause the project to delay.

A design change is defined as any change in the design or construction of a project after the contract is awarded and signed. Such changes are related not only to matters in

accordance with the provision of the contract but also changes to the work conditions (Burati et al., 1992). As stated in New Straits Times 21st Oct 2015 by Minderjeet Kaur, "The project of constructing KLIA2 that began since 2009 had several delay due to the design changes and extensive earthworks". Malaysia Airports has to date forked out RM76.5 million repair works at KLIA2 since the airport opened last year May.

1.3 Problem Statement

Design changes in a construction can give a huge impact in construction project performance. One of them is that they can cause the delay in the project completion time and cost overrun. Delays in construction industries are often means a lot which define the whole project and put various types of hurdles on the way of completion even with the schedule and plan work. It is acknowledged as successful as our projects rapped on our target and schedule time, as accordance with the specifications, in estimated budget and client satisfaction. The most important problems in the construction project is delays. Generally we experience different types of delays occur in construction project and the same magnitude. As delays occur in construction such situation should be minimize with a team work and plan with contractor, consultant, and client jointly or severally contribute to the non-completion of the project within the original or the stipulated or agreed contract period. Here construction projects are affected by different types of delays and reason are experienced with step by step reason to be solved with very stone and effective efforts. (Uddin, Ahmad, & Danish, 2017)

One of the project that experienced delay in construction is KLIA2. In this case, Malaysia Airports Holdings Bhd (MAHB) expects to finalise by December discussions with the joint venture between UEM Construction Sdn Bhd and Bina Puri Holdings Bhd to determine the quantum of the liquidated and ascertained damages (LAD) charged to the joint venture for the delay in completing the KLIA2 terminal building in Sepang. MAHB managing director Datuk Badlisham Ghazali said MAHB said this during a press conference at the Global Airport Development Asia 2015 conference in Kuala Lumpur. MAHB has been reported to have said previously that the total LAD incurred by the UEM-Bina Puri JV was RM60mil. However, the contractors appealed against the LAD, saying that there were many last-minute requests and additional changes by the clients. (Poo, 2015).

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